BURKINA FASO | INNOVATIONS IN AGROECOLOGY

AGROECOLOGICAL SYSTEMS OF MANURE PRODUCTION

In western Burkina Faso, on-farm manure production has long been confined to the edges of houses and cattle pens. With increasing land pressure and the remoteness of fields, manure production was hampered by transport constraints, and a large proportion of raw material needed in manure production, such as crop residues and faeces, were lost. On-farm manure production remained insufficient for soil fertility renewal.

DESCRIPTION OF THE INNOVATION

In order to increase farm manure production in quantity and quality, and to renew soil fertility in an agroecological way, researchers from dP Asap (Cirad, Cirdes), stakeholders and producers (UPPC-Tuy, INADES) worked together, from 2008 to 2012 on the Fertipartenaires project to design and support the production of manure directly in the field, with low inputs. In 2015, an impact assessment was carried out with the Impress method.

The innovation in manure production is based on:

- Establishing pits in the fields to limit the transport of crop residues;
- Composting cotton stems, usually burnt, with animal faeces, in a mix of 80 percent stems to 20 percent faeces;
- Starting production at the beginning of the rainy season, and harvesting the manure one year later;
- Limiting human intervention during the process (no hashing, no watering, no turning).

Photos: Manior manure pit at home and in the field
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DESIGN AND SHARING OF THE INNOVATION

Co-design "step by step" is based on a formalized partnership between producers, stakeholders and researchers.

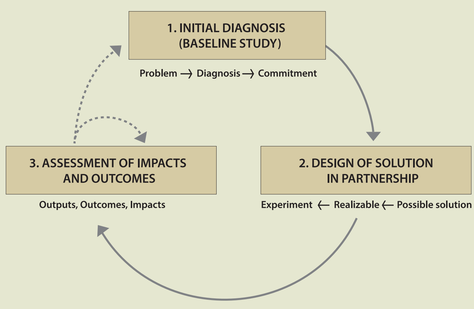
The co-design process starts with an analysis of the initial situation (baseline study), followed by the exploration of possible solutions (training, inter-farmer visits), then on-farm experiments and adaptations of innovative techniques, and ends with a participative impact assessment.

BENEFIT FOR FAMILY FARMERS AND FOOD AND NUTRITION SECURITY

The co-design of innovation has led to the acquisition of knowledge in manure production, and changes in manure production and management practices, with visible impacts continuing after the cessation of research. Among farmers who participated in the co-design process, manure production has increased by 7 tonnes per farm; and food security at farm level has been reinforced by a 786 kg/ha increase in maize yields.

SOCIAL, ENVIRONMENTAL AND ECONOMIC IMPACTS

Soil fertility was enhanced with 677 kg/ha manure dose increases applied on fields; and farm income benefits from the best yields and inputs saved, were XOF 40 (approximately USD 0. 076) per hectare for cotton. Thanks to the networks established during the co-design phase, impacts increased among farmers who did not directly participate in the co-design process.



LESSONS LEARNED AND RECOMMENDATIONS

Partnership formalization among farmers, stakeholders, and researchers, and the pursuit of research in the long term, enables the co-design of innovation, and accompanies the agroecological transition by changing farmers' practices and producing lasting impacts for the experimenters and beyond, via the networks created.

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